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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/994,490	11/26/2001	Teck H. Hu	29250-000601	1107
30594	7590	05/17/2005	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 8910 RESTON, VA 20195			YANG, LINA	
			ART UNIT	PAPER NUMBER
			2665	

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/994,490

Applicant(s)

HU ET AL.

Examiner

Lina Yang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 15 is/are rejected.
- 7) ☒ Claim(s) 12-14 and 16-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 1/3/2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5/21/2003
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "medium 12" on page 4 line 14.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Will (U.S. Patent No. 5,588,009).

Regarding claim 1, Will teaches a method of transmitting data packets, comprising: assigning first data packets a transmission sequence number, the transmission sequence number indicating a sequence of transmission for the first data packets ("packet sequence number" 82 in Fig. 8; col. 10 lines 61-63); transmitting the first data packets to a destination device (col. 5 lines 15-16);

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receiving second data packets from the destination device, at least one of the second data packets indicating by transmission sequence number whether one of the first data packets has been received by the destination device (93 contains "packet sequence number" in Fig. 9; col. 5 lines 18-20; col. 11 lines 14-16); and inserting an acknowledge sequence number in at least one of the first data packets based on results of the receiving step, the acknowledge sequence number being the transmission sequence number of a first data packet that has been received by the destination device as determined in the receiving step ("packet sequence number" in Fig. 10; col. 11 lines 30-31).

Regarding claim 6, it is an apparatus claim for the method claim 1, which does not provide further limitations, therefore, claim 6 is rejected for the same reasons as set in forth for claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Will (U.S. Patent No. 5,588,009) in view of Lei et al. (U.S. Patent No. 6,401,127 B1).

Regarding claim 2, Will differs from the claimed invention in that Will does not specifically teaches that aborting the transmission of one of the first data packets; and inserts an acknowledge sequence number equal to the transmission sequence number for the aborted first data packet into one of the first data packets to be transmitted. However, it is a common practice to have the source station retransmit the lost data (including aborted data) in order to compensate for lost data during transmission from a source station to a destination station. For example, Lei discloses a reliable communication where some point-to-point protocols the LLC TYPE 2 function in the LLC layer can read the sequence numbers of received packets, and can request retransmission of packets which are missing (col. 2 lines 1-4); and making use of REJ ("reject") packets which indicates that the receiver is requesting retransmission of packets starting with the number in the receive sequence number field (col.2 lines 32-34). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate aborting the transmission of one of the first data packets; and inserting an acknowledge sequence number equal to the transmission sequence number for the aborted first data packet into one of the first data packets to be transmitted, such as the one taught by Lei into the assembly taught by Will in order to compensate for lost data during transmission from a source station to a destination station.

Regarding claim 7, it is an apparatus claim for the method claim 2, which does not provide further limitations, therefore, claim 7 is rejected for the same reasons as set in forth for claim 2.

3. Claims 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Will (U.S. Patent No. 5,588,009) in view of Lei et al. (U.S. Patent No. 6,401,127 B1), and further in view of Shalom (U.S. Patent Application No. 20020131425 A1).

Regarding claim 3, the modified assembly of Will and Lei differs from the claimed invention in that Moon, Will and Lei do not specifically discloses the aborting step aborts the transmission of the first data packet when another first data packet having a higher priority class is ready for transmission. However, it is well known in the art that the transmission of lower priority data is interrupted/aborted when the transmission of higher priority data is needed. For example, Shalom teaches aborting the transmission of the first data packet when another first data packet having a higher priority class is ready for transmission (Page 1, paragraph [0011]). Therefore, it would have been obvious for one of ordinary skill in the art to include aborting the transmission of the first data packet when another first data packet having a higher priority class is ready for transmission, such as the one taught by Shalom into the modified assembly taught by Will and Lei in order to send the high priority packets (such as aborting

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high priority packets 111 to transmit urgent priority packets 110 in Fig. 11 in Will) immediately.

Regarding claim 8, it is an apparatus claim for the method claim 3, which does not provide further limitations, therefore, claim 8 is rejected for the same reasons as set in forth for claim 3.

4. Claims 4 -5 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Will (U.S. Patent No. 5,588,009), in view of Shalom (U.S. Patent Application No. 20020131425 A1) and further in view of Lei et al. (U.S. Patent No. 6,401,127 B1).

Regarding claim 4, Will teaches a method of transmitting data packets, comprising: assigning first data packets a transmission sequence number, the transmission sequence number indicating a sequence of transmission for the first data packets ("packet sequence number" 82 in Fig. 8; col. 10 lines 61-63); transmitting the first data packets to a destination device (col. 5 lines 15-16).

Will differs from the claimed invention in that Will does not specifically teaches that aborting transmission of a data packet; and inserting an acknowledge sequence number in at least one of the data packets, the acknowledge sequence number being the transmission sequence number of the data packet that was aborted.

However, it is well known in the art that the transmission of lower priority data is interrupted/aborted when the transmission of higher priority data is

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needed. For example, Shalom teaches aborting the transmission of the first data packet when another first data packet having a higher priority class is ready for transmission (Page 1, paragraph [0011]). Therefore, it would have been obvious for one of ordinary skill in the art to include aborting the transmission of the first data packet when another first data packet having a higher priority class is ready for transmission, such as the one taught by Shalom into the assembly taught by Will in order to send the high priority packets (such as aborting high priority packets 111 to transmit urgent priority packets 110 in Fig. 11 in Will) immediately.

The modified assembly of Will and Shalom differs from the claimed invention in that Will and Shalom does not specifically teaches that inserting an acknowledge sequence number in at least one of the data packets, the acknowledge sequence number being the transmission sequence number of the data packet that was aborted.

However, it is a common practice to have the source station retransmit the lost data (including aborted data) in order to compensate for lost data during transmission from a source station to a destination station. For example, Lei discloses a reliable communication where some point-to-point protocols the LLC TYPE 2 function in the LLC layer can read the sequence numbers of received packets, and can request retransmission of packets which are missing (col. 2 lines 1-4); and making use of REJ ("reject") packets which indicates that the receiver is requesting retransmission of packets starting with the number in the receive sequence number field (col.2 lines 32-34). Therefore, it would have

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been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate inserting an acknowledge sequence number equal to the transmission sequence number for the aborted first data packet into one of the first data packets to be transmitted, such as the one taught by Lei into the assembly taught by Will and Shalom in order to compensate for lost data during transmission from a source station to a destination station.

Regarding claim 9, it is an apparatus claim for the method claim 4, which does not provide further limitations, therefore, claim 9 is rejected for the same reasons as set in forth for claim 4.

Regarding claim 5, the modified assembly of Will, Shalom and Lei discloses the aborting step aborts the transmission of the data packet when another data packet having a higher priority class is ready for transmission (Page 1, paragraph [0011] in Shalom).

Regarding claim 10, it is an apparatus claim for the method claim 5, which does not provide further limitations, therefore, claim 10 is rejected for the same reasons as set in forth for claim 5.

5. Claims 11 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shalom (U.S. Patent Application No. 20020131425 A1) in view of Lei et al. (U.S. Patent No. 6,401,127 B1).

Regarding claim 11, Shalom teaches a method of receiving data packets, comprising: receiving data packets at a destination device from a source device, each data packet having a transmission sequence number, the transmission sequence number indicating a sequence of transmission for the data packets (page 1, paragraph [0005]); storing the received data packets in at least one buffer (Inherent, shown inside the RECEIVER in Fig. 1, the part before re-assembler, there has to be at least one buffer to store all those packets with different sequence numbers);

Shalom differs from the claimed invention in that shalom does not specifically teaches that at least one of the data packets including an acknowledge sequence number, the acknowledge sequence number indicating that the source device considers the data packet having a transmission sequence number equal to the acknowledge sequence number was received at the destination device. However, it is well known in the art to use "acknowledgement of an acknowledgement" packet to cause the termination of repeated transmissions of acknowledgements from the receiving side. For example, Will teaches that at least one of the data packets including an acknowledge sequence number, the acknowledge sequence number indicating that the source device considers the data packet having a transmission sequence number equal to the acknowledge sequence number was received at the destination device ("packet sequence number" in Fig. 10; col. 11 lines 19-31). Therefore, it would have been obvious for one of ordinary skill in the art to include that at least one of the data packets including an acknowledge

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sequence number, the acknowledge sequence number indicating that the source device considers the data packet having a transmission sequence number equal to the acknowledge sequence number was received at the destination device as taught by Will into the assembly taught by Shalom in order to terminate the possible repeated transmissions of acknowledgements from the receiving side.

The modified assembly of Shalom and Will further teaches outputting data packets in order of transmission from the buffer at least based on the transmission sequence numbers of the data packets and the acknowledge sequence number (output data from REASSEMBLER 44 in Fig. 1 and 62 in Fig. 2 in Shalom).

Regarding claim 15, it is an apparatus claim for the method claim 11, which does not provide further limitations, therefore, claim 15 is rejected for the same reasons as set in forth for claim 11.

Allowable Subject Matter

6. Claims 12-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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7. Claims 16-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lina Yang whose telephone number is (571)272-3151. The examiner can normally be reached on 7:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LY


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